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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,585	07/16/2003	Margaret S. Wooldridge	UOM 0273 PUSP	8885
22045	7590	01/23/2006	EXAMINER	
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			WYSZOMIERSKI, GEORGE P	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/620,585

Applicant(s)

WOOLDRIDGE ET AL.

Examiner

George P. Wyszomierski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8 and 10 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/12/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. Applicant's election with traverse of Group I, claims 1-8 and 10 in the reply filed on November 7, 2005 is acknowledged. The traversal is on the ground(s) that the unique environment used in the elected process creates nanoparticles of Sn and SnO (the non-elected products) which are impossible to obtain by other processes. This is not found persuasive because Applicant has provided no scientific basis for this assertion, e.g. with reference to textbooks or scholarly journals that would tend to support the veracity of such an assertion.

The requirement is still deemed proper and is therefore made FINAL.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-86227.

The JP '227 reference discloses making nanoparticulate silicon dioxide 1-20 nm in diameter by decomposing a volatile silicon compound such as silicon hydride in a flame generated by burning a mixture of a combustible gas (e.g. hydrogen) and a combustion gas (e.g. oxygen). The gases used in the prior art do not appear to be mixed with any other substance and therefore are held to meet the "non-premixed" limitations of the instant claims.

The '227 reference does not specify some of the limitations regarding the flame burner and arrangements of passageways as recited in clause (a) of instant claim 1. This is not seen

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as resulting in a patentable distinction between the prior art and the claimed invention because these limitations are seen as defining largely apparatus limitations, and as such do not render a process patentable when all of the process steps as claimed are disclosed in the prior art.

Compare *In re Sweeney* (72 USPQ 501). Further, the JP '227 process would appear to be amenable to being performed in an apparatus having a structure as recited in the instant claims.

Thus, a prima facie case of obviousness is established between the disclosure of JP '227 and the presently claimed invention.

4. Claims 1-5, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glumac et al. (U.S. Patent 5,876,683).

Glumac discloses producing nanophase powders of e.g. silicon dioxide by mixing a combustion gas such as hydrogen with a combustible gas such as oxygen to produce a flame, and introducing a precursor such as a volatile metal compound into the flame to decompose the precursor into the desired material. With respect to instant claim 8, Glumac discloses the presently claimed inert gas; see Glumac column 4, lines 3-5. With respect to instant claim 10, Glumac column 4, lines 33-35 indicates that the flow rate of the gas stream can be controlled to ensure complete decomposition of the precursor in the flame, and this would encompass control of the oxidation state of the combusted product.

Glumac does not specify some of the limitations regarding the flame burner and arrangements of passageways as recited in clause (a) of instant claim 1, and does not specify a particle size as recited in instant claim 5. These differences are not seen as resulting in a patentable distinction between the prior art and the claimed invention because:

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a) With respect to the flame burner and passageways limitations, the remarks made supra with regard to apparatus limitations in a process claim apply equally as well in this instance.

b) With regard to particle size, the description of the products of Glumac as being "nanophase" would imply a size as presently claimed to one of skill in the art.


Thus, a prima facie case of obviousness is established between the disclosure of Glumac et al. and the presently claimed invention.

5. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose or suggest employing an organic tin compound as a precursor or obtaining tin or tin oxide in a process as presently claimed.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (571) 272-1252. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (571) 272-1244. All patent application related correspondence transmitted by facsimile must be directed to the new central facsimile number, (571)-273-8300. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER  
GROUP 1700

GPW  
January 12, 2006